

# **EXHIBIT C**

# **BLACK'S MEDICAL DICTIONARY**

Edited by C. W. H. Havard, MA, DM, FRCP

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## PHTHIRIASIS

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**PHTHIRIASIS** means the condition of eczema, matted hair, dirt, and enlarged glands caused by the crab louse (*Pediculus pubis*). (See **PEDICULOSIS**.)

**PHTHISIS** means wasting, and is the general term applied to that progressive enfeeblement and loss of weight that arise from tuberculous disease of all kinds, but especially from the disease as it affects the lungs.

**PHYSIOLOGY** is the branch of medical science that deals with the healthy functions of different organs, and the changes that the whole body undergoes in the course of its activities.

**PHYSIOTHERAPY** is the form of treatment involving the use of physical measures, such as exercise, heat and massage in the treatment of disease. An alternative name is **PHYSICAL MEDICINE**.

**PHYSOSTIGMINE**, or **ESERINE**, is an alkaloid obtained from Calabar bean, the seed of *Physostigma venenosum*, a climbing plant of West Africa. Calabar bean is known also as the ordeal bean, because preparations derived from it were at one time used by the natives of West Africa to decide the guilt or innocence of accused persons, the guilty being supposed to succumb to its action, while the innocent escaped. Its action depends on the presence of two alkaloids, the one known as physostigmine or eserine, the other as calabarine, the former of these being much the more important.

**Action:** Physostigmine produces the same effect as stimulation of the parasympathetic nervous system (qv): ie. it constricts the pupil, stimulates the gut, increases the secretion of saliva, stimulates the bladder, and increases the irritability of voluntary muscle. In poisonous doses it brings on a general paralysis.

**Uses:** It is used in medicine in the form of physostigmine salicylate. Its main use is to contract the pupil and thereby reduce the pressure inside the eyeball. For this purpose it is used as eye-drops or as lamellae. It is also given by subcutaneous injection to stimulate the gut when this is paralysed or atonic. It is the specific antidote (qv) to atropine and is therefore used in the treatment of atropine poisoning (qv).

**PHYTOMENADIONE** is the *British Pharmacopoeia* name for vitamin K. (See **VITAMIN**.)

**PIA MATER** is the membrane closely investing the brain and spinal cord, in which run blood-vessels for the nourishment of these organs. (See **BRAIN**; **SPINAL CORD**.)

**PICA** (Latin for magpie) is a term which means an abnormal craving for unusual foods. It is not uncommon in pregnancy. Among the unusual substances for which pregnant women have developed a craving are soap,

clay pipes, bed linen, charcoal, ashes — and almost every imaginable foodstuff taken in excess. In primitive races it is taken to mean that it indicates the growing foetus requires such food. It is also not uncommon in children. (See **APPETITE**; **LEAD POISONING**.)

**PICORNAVIRUSES** derive their name from pico (small) and RNA (because they contain ribonucleic acid). They are a group of viruses which includes the enteroviruses (qv) and the rhinoviruses (qv).

**PICRIC ACID**, or **TRINITROPHENOL**, is used for preparing explosives, and so is employed in medicine only in solution. As it coagulates albumin, it produces a soothing pellicle over any raw surface with which it is brought into contact. It has antiseptic properties, but is rapidly going out of use because of its toxic effects.

**PIGEON BREAST** (see **CHEST DEFORMITIES**).

**PIGEON-BREEDER'S LUNG**, or **BIRD FANCIER'S LUNG** as it is sometimes known, is a form of extrinsic allergic alveolitis resulting from sensitization to pigeons. In pigeon fanciers skin tests have revealed sensitization to pigeons' droppings, eggs, protein and serum, even though there has been no evidence of any illness. (See **ALVEOLITIS**.)

**PIGMENT** is the term applied to the colouring matter of various secretions, blood, etc.; also to any medicinal preparation of thick consistence intended for painting on the skin or mucous membranes.

**PILES**, or **HAEMORRHOIDS**, consist of a varicose and often inflamed condition of the veins about the lower end of the bowel, known as the haemorrhoidal veins.

**Varieties:** It is usual to divide haemorrhoids into external piles, internal piles, and mixed piles. To understand this division, it is important to remember that at the margin of the anus the skin joins the mucous membrane of the bowel in a sharp line, and that the bowel is kept closed by two circular muscles, the external sphincter and internal sphincter. The external sphincter is a weak muscle situated immediately beneath the skin, while the internal sphincter is a stronger circular band, extending up the bowel for about 2½ cm. External piles are found outside the bowel, and are covered by skin, being brown or dusky purple in colour; internal piles are within the opening, covered by mucous membrane, and are bright red or cherry-coloured. Mixed piles are those situated just on the margin, and covered half by skin, half by mucous membrane. Even internal piles do not extend past the position of the internal sphincter muscle.

**Causes:** There is always a tendency for the veins in this situation to become distended, partly because they are unprovided with

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a cure for the condition. Increasing experience has shown that its use is not without danger. Used with circumspection, under skilled supervision, it is undoubtedly a useful adjunct in the treatment of rheumatoid arthritis but it by no means replaces the well-tried measures which are summarized in the remainder of this section.

These consist, in the first place, of rest, the degree of rest depending upon the severity of the condition. Rest, however, must never be absolute, even in the acute stages, as this may lead to unnecessary stiffness in the joints. It must be accompanied by exercises to keep the joints as mobile as possible. During the more acute phases, when it is necessary to keep the patient in bed, the affected joints should be splinted so as to prevent deformities developing. Heat, in the form of hot water bottles, paraffin baths, or diathermy, is useful in relieving pain and discomfort, and this may be supplemented by the administration of aspirin or other non-steroidal anti-inflammatory drugs. Treatment is also of value. Satisfactory results have been obtained from the use of intramuscular salts of gold. Although gold does not produce a cure, it is the one agent which, apart from the cortisone group of drugs, has been shown to improve the condition. Its use, however, is not without risk, and it must therefore only be used under medical supervision. Penicillamine (qv) and chloroquine (qv) are two other potent drugs that are of value but, like gold, they must only be used under skilled medical supervision. Surgery is only required to correct any deformity which is crippling the patient, provided this crippling is confined to one or two joints. The general health of the patient must be attended to by ensuring that he or she has an adequate nutritious diet, containing

plenty of milk, fruit, and vegetables. Dental care is necessary, but it is now recognized that there is no justification for the wholesale extraction of teeth which was fashionable at one time. Removal to a dry, warm climate is beneficial, but economically this is seldom advice that can be followed by the affected individual. (See also STILL'S DISEASE.)

OSTEOARTHRITIS, or OSTEOARTHRITIS, is the most common disorder of joints and is estimated to be present in 80 to 90 per cent of people over the age of 60 years. It is characterized by gradual destruction of the central part of the cartilage lining the affected joint, whilst at the same time there is overgrowth of the outer part of the cartilage which ultimately results in the growth of bony spurs or osteophytes. The condition is probably a degenerative one, but it is accentuated or accelerated by trauma. Thus, it is liable to occur in a knee in which there has been cartilage trouble which has not been treated adequately. Obesity, accompanied as it so often is by faulty posture, results in abnormal stresses and strains being applied to the hip joints and knees, and this in due course results in osteoarthritic changes in these joints. There is some evidence that there may be a hereditary predisposition. The condition is more common in women than in men, and the joints mainly involved are the hip, the knee, and the shoulder joint. The terminal joints of the fingers are also quite a common site. Pain and stiffness in the affected joints are the usual manifestations of the disease. A creaking sensation (crepitus) is felt in moving the joint in the more advanced cases. In chronic cases the joint becomes enlarged. There is seldom any generalized disturbance such as fever or malaise. The diagnosis is confirmed by X-ray examination.

Treatment consists of rest and graduated exercises. When the joints are painful the local application of heat is beneficial: eg. hot towel packs or infra-red light. Aspirin or sodium salicylate also relieves the pain temporarily. If the individual is overweight, a reducing diet is necessary to bring the weight down. In the more advanced cases, surgery is often of value.

In advanced cases of the disease involving the hip, satisfactory results are now being obtained from replacement of the damaged hip by an artificial hip joint. Knee replacement operations are also being performed, but these have not yet attained the high standard of success achieved with the hip replacement operation performed by experienced orthopaedic surgeons in carefully selected cases.

People with rheumatism of any form, and their relatives, can obtain help and advice from Arthritis Care, 6 Grosvenor Crescent, London SW1X 7ER (01-235 0902).

**RHEUMATOID ARTHRITIS** (see RHEUMATISM).

**RH FACTOR** (see BLOOD GROUPS).

**RHINITIS** means inflammation of the mucous membrane of the nose. (See NOSE, DISEASES OF.)

**RHINOPHYMA** is the condition characterized by enlargement of the nose due to enormous enlargement of the sebaceous glands which may develop in the later stages of rosacea (qv).

**RHINOPLASTY** means the repair of the nose or the modification of its shape by operation. The operation is carried out by obtaining a flap of skin from the forehead or from the forearm. In milder cases of deformity the shape is often improved by injection of paraffin under the skin of the nose, or by insertion of a piece of cartilage taken from one of the ribs. (See ARTIFICIAL LIMBS AND OTHER PARTS.)

**RHINOVIRUSES** are a large group of viruses; to date around 80 distinct rhinoviruses have been identified. Their practical importance is that some of them are responsible for around one-quarter of the cases of the common cold.

**RHIZOTOMY** is the surgical operation of cutting a nerve root, as, for example, to relieve the pain of trigeminal neuralgia.

**RHONCHI** denotes the harsh cooing, hissing, or whistling sounds (wheezing) heard by auscultation over the bronchial tubes when they are the seat of infection. (See BRONCHITIS.)

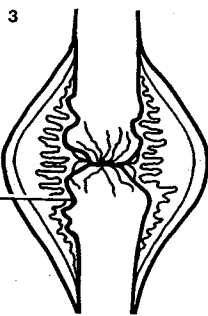
**RHUBARB** is the root of *Rheum palmatum*, a plant originally derived from China and Tibet, and other species of *Rheum*. It has a gentle purgative action.

**RHUS** is a genus of trees and shrubs, some of which are used as astringents, while others, particularly *Rhus toxicodendron*, or poison oak, and *Rhus radicans*, or poison ivy, are poisonous. (See POISON IVY.)

**RIBOFLAVINE** is the *British Pharmacopoeia* name for what used to be known as vitamin B<sub>2</sub>. Riboflavin belongs to a group of animal and plant pigments which give a greenish fluorescence on exposure to ultra-violet rays. It is present especially in milk, and is not destroyed during pasteurization. Other rich sources are eggs, liver, yeast and the green leaves of broccoli and spinach. It is also present in beer. Deficiency of riboflavin in the diet is thought to cause inflammation of the substance of the cornea, sores on the lips, especially at the angles of the mouth (cheilosis (qv)), and dermatitis.

The minimal daily requirement for an adult is 1.5 to 3 mg, but is greater during pregnancy and lactation.

**RIBS** are the bones, twelve on each side, which enclose the cavity of the chest. The upper seven are joined to the breast-bone by their costal cartilages and are therefore known as true ribs. The lower five do not reach the



4 inflamed synovium  
5 eroded cartilage  
6 erosion of bone